

WSRD SM S901 SERIES, STAINLESS STEEL ENCLOSED SAFETY SWITCHES WITH INTERLOCKED ARKTITE® RECEPTACLES

COOPER Crouse-Hinds

Installation & Maintenance Information

IF 1467

SAVE THESE INSTRUCTIONS FOR FUTURE REFERENCE

APPLICATION

WSRD SM S901, Heavy duty NEMA TYPE 3, 3R, 4, 4X Series enclosed safety switches with interlocked ARKTITE receptacles are designed to provide connection and distribution of secondary electrical power (600 volts or less) between a power source and portable or stationary electrical equipment. Fusible type WSRD switches also provide short circuit protection. WSRD Series switches with interlocked ARKTITE receptacles are supplied 3-wire, 4-pole fusible and non-fusible arrangements with or without a viewing window with Style 2 grounding where ground is connected through an extra pole and the shell.

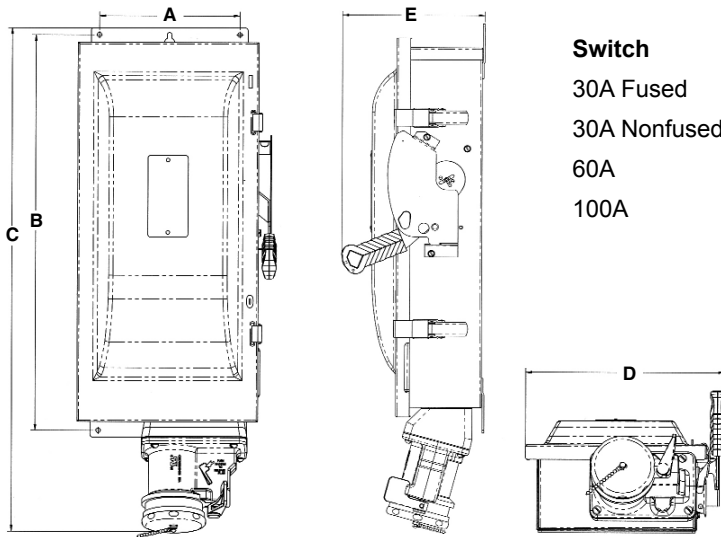
WSRD SM S901 Series switches are interlocked both with the enclosure door and ARKTITE receptacle. The plug cannot be withdrawn or inserted unless the switch is open (OFF). The enclosure cover cannot be opened when plug is engaged and the switch is closed (ON). When the switch is open (OFF) the switch cannot be put in a closed (ON) position with the door open.

The ARKTITE receptacles supplied with the WSRD SM S901 Series enclosures are polarized to prevent mis-matching. Each receptacle mates with a specific Crouse-Hinds APJ and NPJ, Series ARKTITE plug with the same electrical rating, grounding style and contact configuration. Refer to Crouse-Hinds Product Catalog for a complete listing of WSRD SM S901 Series safety switches with interlocked ARKTITE receptacles and matching ARKTITE plugs.

WSRD SM S901 Series products are designed for use in corrosive, wet, hosedown areas for indoors or outdoors.

The WSRD SM S901 Series enclosure should be installed, inspected, operated and maintained by qualified and competent personnel.

DIMENSIONS



Switch	A	B	C	D	E
30A Fused	5.47	16.49	23.49	9.00	8.61
30A Nonfused	5.47	13.36	20.36	9.00	8.61
60A	7.99	18.49	25.49	11.52	8.61
100A	8.47	24.18	31.18	12.00	8.61

INSTALLATION

⚠ WARNING

Electrical power must be turned OFF before and during installation and maintenance.

1. Select a mounting location that will provide suitable strength and rigidity for supporting the enclosure. Fasten unit to mounting location using ¼ inch diameter mounting bolts or screws.
- Always locate enclosure in vertical position with receptacle pointing downward.
- The recommended mounting height from ground or floor level to the bottom of the receptacle is 42 to 52 inches.

⚠ WARNING

WSRD receptacle housing must be securely connected to a permanently grounded system in accordance with Article 250 of the National Electrical Code®.

2. Determine the type of distribution system to be used that will comply with NEC requirements and ensure grounding continuity.

Proper grounding of systems and circuit conductors is required to limit hazardous voltages caused by lightning, line surges or unintentional contact with higher voltage lines and to stabilize the voltage to ground during normal operation. All conductive materials that house the electrical conductors or attached equipment or forming part of such equipment must be grounded. A permanent conducting connection must be made between all such equipment and the earth. See **Figure 1** on the next page.

3. Connect enclosure to electrical distribution system. See **Table 1**, HP Rating/Wire Range for wire sizes. All WSRD SM S901 Heavy Duty NEMA TYPE 4X safety switches meet NEC wire bending space requirements. Space is provided per Table 373-6b on line side for largest wire that may be used.

Table 1
HP Rating / Wire Range

CROUSE-HINDS CAT. NO.	AMPS	FUSING	240 VAC (1 PH)	240 VAC (3 PH)	480 VAC (1 PH)	480 VAC (3 PH)	600 VAC (1 PH)	600 VAC (3 PH)	250 VDC	Al/Cu Wire Range (line Side)
WSRD33542SMS901	30	NON-FUSED	5	10	7.5	20	10	30	5	#14-6
WSRDW33542SMS901		FUSED	1.5 (3)	3 (7.5)	3 (7.5)	5 (15)	3 (10)	7.5 (20)	5	#14-6
WSRD63542SMS901	60	NON-FUSED	10	20	20	50	25	60	10	#14-2
WSRDW63542SMS901		FUSED	3 (10)	7.5 (15)	5 (20)	15 (30)	10 (25)	15 (50)	10	#14-2
WSRD103542SMS901	100	NON-FUSED	15	40	30	75	40	100	20	#14-1/0
WSRDW103542SMS901		FUSED	7.5 (15)	15 (30)	10 (30)	25 (60)	15 (40)	30 (75)	20	#14-1/0

* VALUES FOR NON-FUSED UNITS ARE MAX HORSEPOWER. VALUES FOR FUSED UNITS ARE STD. HORSEPOWER WITH STD. FUSE AND (MAX. HORSEPOWER WITH TIME DELAY).

Typical distribution systems are illustrated below:

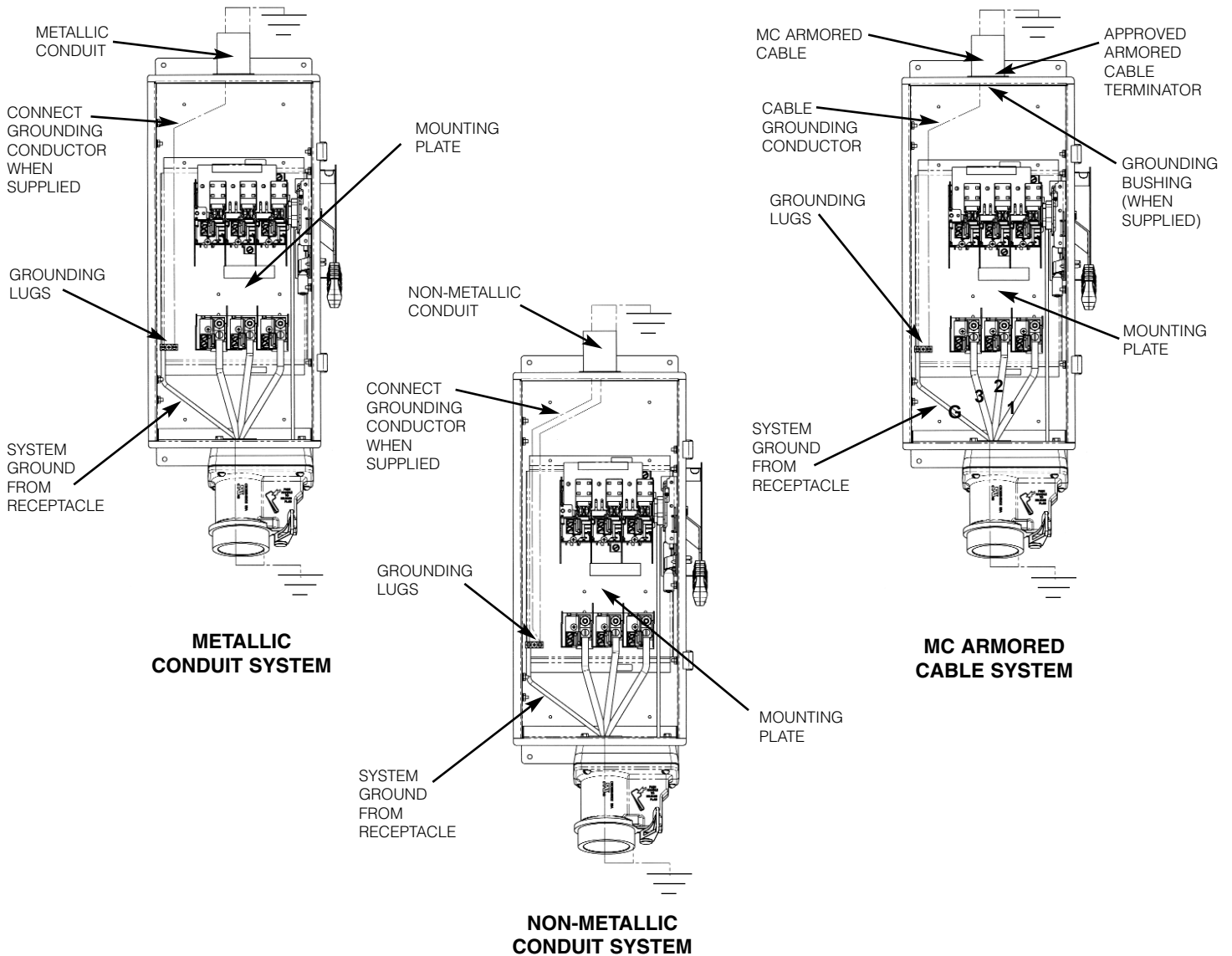


Figure 1. Grounding Systems

WIRING CONNECTIONS

1. Establish a wiring pattern for your system.

⚠ WARNING

Before installing a WSRD SM 901 Series enclosed safety switch and interlocked ARKTITE receptacle, a wiring pattern must be established for your system. Locations having different voltages, frequencies or types of current (AC or DC) MUST NOT have interchangeable attachment plugs as stated in paragraph 210-7F of the National Electrical Code.

2. Pull all phase conductors into enclosure and make connections to the LINE pressure connector terminations following the wiring pattern established for your system. Connect grounding conductors. The ground conductor must be fastened to the ground terminal on the neutral block. See **Figure 2**.
3. Check plug/receptacle polarization. The ARKTITE® receptacles on the WSRD SM S901 enclosures are polarized so that mating plugs can enter the receptacle only one way. Also, the mating contacts in the receptacle and corresponding plug are identified by numbers on the insulating recesses. Note: Some ARKTITE plugs manufactured prior to 1982 identify the mating contacts by color. Contact members in the receptacle must always mate with those in a plug identified by the same number (or color). This assures proper polarity or phase rotation of conductors through receptacle and plug. See **Figure 3**.

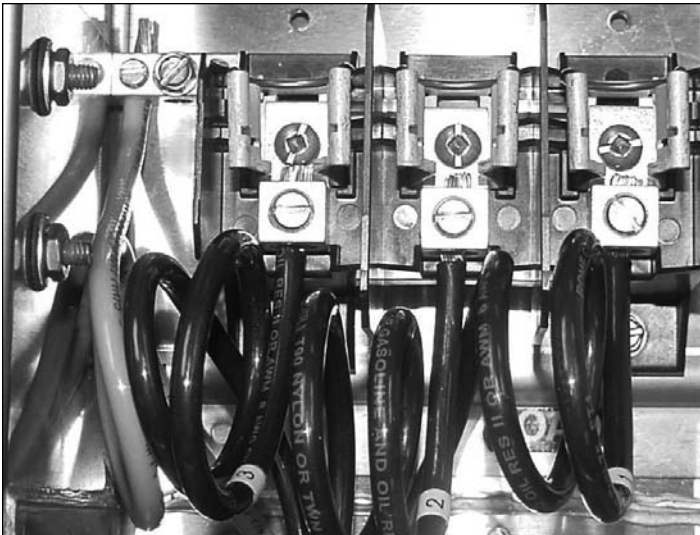
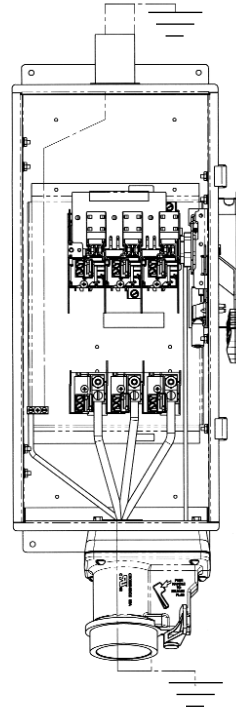


Figure 2. WSRD Interior

Before energizing this system, verify polarity correctness with a continuity check. Correct polarity MUST be ascertained before using the equipment.

Check insulation resistance to be sure system does not have any short circuits or unwanted grounds.



Style II Grounded Through Extra Ground Contact

Figure 3. Contact Polarization

4. Install proper rated cartridge fuses (not included with enclosure) in fusible type safety switches. WSRD fusible safety switches are factory-set for Class K or H fuses and are rated to withstand 10,000 amps RMS symmetrical. Class R fuses are rated to withstand 200,000 amps RMS at 600V maximum.
5. Test wiring for correctness with continuity checks and for unwanted grounds with insulation resistance tester. An insulation resistance of less than one megaohm on an open circuit is an unsafe condition and must be corrected prior to turning the power on.
6. Place operating handle in open (OFF) position then close cover and secure with two buckle latches.
7. Before turning on power to WSRD enclosure, check safety interlock mechanism for proper operation.
 - The plug cannot be inserted or withdrawn unless the switch is open (OFF).
 - The enclosure door cannot be opened when the plug is inserted and the switch closed (ON). When the switch is open (OFF), it cannot be put in a closed (ON) position with the door open.

⚠ CAUTION

Forcing the switch operator handle mechanism without using proper ARKTITE® plug or with enclosure door open will damage safety interlock.

MAINTENANCE

 **WARNING**

Always disconnect primary power source before opening enclosure for inspection or service.

1. Frequent inspection should be made. A schedule for maintenance check should be determined by the environment and frequency of use. It is recommended that it should be at least once a year. We recommend an Electrical Preventive Maintenance program as described in the National Fire Protection Association Bulletin NFPA No. 70B.
2. Perform visual, electrical, and mechanical checks on all components on a regular basis.
 - Visually check for undue heating evidenced by discoloration of wires or other components, damaged or worn parts, or leakage evidenced by water or corrosion in the interior.
 - Electrically check to make sure that all connections are clean and tight, and that blade contacts make or break as required.
 - Mechanically check that all parts are properly assembled, interlocks working, and operating mechanisms move freely.

 **WARNING**

If any part of the switch, receptacle and/or plug appears to be broken or damaged,

DISCONTINUE USE IMMEDIATELY

Replace, or properly repair the item before continuing service.

All statements, technical information and recommendations contained herein are based on information and tests we believe to be reliable. The accuracy or completeness thereof are not guaranteed. In accordance with Crouse-Hinds "Terms and Conditions of Sale", and since conditions of use are outside our control, the purchaser should determine the suitability of the product for his intended use and assumes all risk and liability whatsoever in connection therewith.
